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Moulds, mildews, and mushrooms.

UNDER the above title Professor Underwood⁵ has given us a very interesting little work on fungi and mycetozoa. The volume seems to be a book of today, written especially to aid the American student of this generation and in the hope that it will stimulate and help him in the study of the American fungus flora.

The presentation and background of the work takes the standpoint of taxonomy, but a taxonomy wonderfully free from the dry diagnoses of most systematic descriptions and everywhere combined with interesting accounts of life habits and activities. The orders and families are presented and arranged largely after the treatment followed in "Die natürlichen Pflanzenfamilien." Genera are described for the fleshy fungi, the cup fungi (Pezizales) and certain groups, containing chiefly parasites from the Ascomycetes and Fungi Imperfecti. The groups selected for this more detailed treatment are well chosen as those most likely to satisfy the wants of students who do not have access to special literature, or whose training is insufficient to enable them to find their way through the varied accounts, good, bad and indifferent, which confront beginners at the outset of their studies.

The keys are clear and precise but are likely to demand from the student a considerably greater knowledge of morphology and descriptive mycology than is presented by the text. But, after all, such a background cannot be given by books and comes only through wide acquaintance with the forms in the field and laboratory.

Edible species of fungi receive special treatment, and the book is likely to help many to a clearer idea of the structural marks that are really valuable as specific characters among the fleshy fungi.

The book is greatly to be commended for the historical account of taxonomic work in mycology in our country. There is first a general account, and then, in a chapter on geographical distribution, a brief statement is given of the work done in each of the United States and neighboring countries of Canada, Greenland, Mexico, Central America, and the West Indies. These chapters are likely to prove very interesting to the readers of Professor Underwood's book. Accompanied as they are by a full bibliography, they will be very useful and are sure to give an impetus to further exploration and study. One is constantly impressed with the fact that the whole book is a plea for more work in systematic mycology and more *thorough* work.

Special attention should be called to the admirably chosen and therefore helpful lists of literature following every topic of importance.

As before indicated, the book presupposes some acquaintance on the part of the student with the morphology and life-histories of fungi, and here may

⁵ UNDERWOOD, LUCIEN M.: Moulds, mildews, and mushrooms. 12 mo. pp. vi+227; *pl.* 10. New York: Henry Holt & Co. 1899.

possibly be a drawback to a very wide circulation. It will perhaps find its readers among a much older group of students than the writer appears to hope, judging from the popular title and the method of presentation.

As the book pleads so eloquently for more work in systematic mycology, its own success is likely to make more apparent the need of a work presenting an account of the detailed morphology, life histories, and possible relationships of the orders and families. With the advances in so many lines since the work of De Bary, the need of such a text in English cannot be too strongly emphasized.

Professor Underwood's book is a marvel in its compactness, with a wonderfully uniform tone throughout, condensed and yet very clear.—BRADLEY M. DAVIS.

MINOR NOTICES.

M. TH. HUSNOT is indefatigable. Not content with his journal, the *Revue Bryologique*, nor with his *Muscologia Gallica*, *Hepaticologia Gallica*, and *Sphagnologia Europæa* with their 142 plates, not to mention many smaller works, nor with his *Musci Galliæ*, *Hepaticæ Galliæ*, and other exsiccatae, with their 1300 numbers, he now puts before the botanical public a quarto fascicle of almost 100 pages and 33 plates, describing and figuring the grasses, wild and cultivated, of France, Belgium, Great Britain, and Switzerland.⁶ More than this, M. Husnot is his own draughtsman, lithographer, and publisher.

The quarto form has been adopted partly for economy and partly for the convenience of the large plates, allowing a considerable number of allied species to be drawn side by side. The letter press is double columned and compact. In substance the text is such as one finds in a manual rather than a monograph. The plates are fairly accurate, their most conspicuous defects being in some of the figures of habit. Details of the flowers are shown and keys to genera and species are given. Altogether, but for its unwieldy form, the author has produced a useful work for the botanists and cultivators of western Europe.—C. R. B.

VOLUME XX of the *Transactions* of the American Microscopical Society contains three papers of interest to bacteriologists and an elaborate study of the primary meristem of thirteen species of Caryophyllales, by Dr. F. E. Clements of the University of Nebraska. The bacteriological papers are "The persistence of bacteria in the milk ducts of the cow's udder" by A. R. Ward; "Experiments in feeding some insects with cultures of comma or cholera bacilli" by R. L. Maddox; and "Questions in regard to the diphtheria bacillus" by M. A. Veeder. An abstract of a portion of Dr. Clements'

⁶ HUSNOT, TH.: Graminées: descriptions, figures et usages des graminées spontanées et cultivées de France, Belgique, Îles Britanniques, Suisse. 4to. pp. viii + 92. pls. 33. Cahan, par Athis (Orne): Th. Husnot. 1896-1899. 25 francs.